

## Roland Arthur Paxton, 1932 -2025

I first met Roland in the late 80s/early 90s when he was a Civil Engineer with Lothian Regional Council. Over the next 40 years we became great friends. I was sure he would go on forever.

As a young man, he was employed by the Ordnance Survey. He was also a Member of the British Speleological Association. A Potholer. In the 1950s he explored the massive Ease Gill Cave System in Cumbria which had recently been discovered in 1946. Roland was by nature a keen and accurate observer and he was very fit as many would testify.

His potholing experience would come in very useful in later life for climbing inside Telford's Dean Bridge.

His observational skills would also become invaluable.

Most of us are content to simply look at things but Roland acquired a far better gift – that of being also able to see things and recognise their importance.

To Observe.

I wish today's civil engineering students were as skilled. Roland could enthuse them far better than me through his talks on engineering infrastructure and the engineers of earlier generations

From 1955 he worked as a Civil Engineer in Local and Civic Government, engaged on the planning, design, and construction of major drainage and sewerage schemes, including work at the State of the Art Davyhulme Waste Water Treatment Plant in Manchester. After studying part time at the Manchester College of Science and Technology he graduated in civil engineering.

In 1959 he then worked on the Leicester Ring Road, before moving to Lothian Regional Council to oversee the construction of the Western Approach Road and the Edinburgh By-Pass, as well as the development of a Cycle Path along part of the former Edinburgh and Dalkeith Railway. In so doing he was responsible for preserving Scotland's oldest railway tunnel at St Leonards.

This is a clue to Roland's other emerging passion. Civil Engineering History, Heritage and Conservation.

Roland was to become, without doubt, the UK's leading Civil Engineering Historian and this was accompanied by his insatiable appetite for collecting associated books, articles and memorabilia, to the extent that he probably had one of the largest, most comprehensive and historically valuable private collections in the UK and beyond. At times it led him to contemplate a structural re-assessment of the load bearing capacity of his loft.

Roland's passion was not just that of an addictive and acquisitive collector of books. They became a personal database of unparalleled importance and which he deployed with great skill and effect in his conservation work. His knowledge was encyclopaedic and his mental search engine of his collection was quite unbelievable. Google? The World Wide Web? Forget it!

In 1987 Roland retired from Lothian Regional Council and came – at my invitation as the then Head of Civil Engineering at Heriot Watt – to become an Honorary Senior Research Fellow to pursue his interests in Civil Engineering history and heritage issues.

And just as importantly, to help imbue our students with an appreciation of the heritage and contribution of their chosen profession. His lectures on the history of civil engineering continued to be an invaluable and much appreciated feature of the first year course.

It wasn't long before Roland was publishing papers at engineering meetings and conferences and his post upgraded to Honorary Professor. At the time we provided all staff a small travel grant for conference attendance, and he soon came to me to say he'd been contacted by the Societies of Civil Engineers in Japan and the USA to give keynote presentations there on his research on Civil Engineering History. This led him to needing a Passport – he hadn't got one.

He soon became one of the Department's leading authors of world class research papers, promoting Heriot-Watt University worldwide.

For many years he chaired the Institution of Civil Engineers' (the ICE's) Panel for Historical Engineering Works and he was awarded the ICE's Garth Watson Medal. In 1996 he was awarded an MBE for his work in Civil Engineering History and Conservation of Engineering Works.

Roland had a long connection with Heriot Watt. In 1975 he had been awarded – again after studying part time – an MSc for his thesis on the life of Thomas Telford – the 1<sup>st</sup> President of the Institution of Civil Engineers, designer of the Dean Bridge in Edinburgh and the Caledonian Canal. His external Examiner was Professor Sir Alec Skempton FRS of Imperial College, with whom he became a great friend.

I've already referred to Roland's Observational Skills. Soon after joining Heriot Watt as an Honorary Member of Staff, Roland came to see me to ask if he could register for PhD without paying fees as a member of staff. He'd read the regulations!

I couldn't see why not so we filled out the forms and sent them over to admin. The next day was one of the Assistant Secretaries in the Registry rang me, concerned that many more of our Honorary staff might do the same. I told him that I thought this unlikely and even if they did it would only enhance our reputation. Roland was duly registered. I asked Roland what the PhD might be on. He replied that he thought it would be on the Stevenson Family of Lighthouse Engineers, and he hoped that Skempton might again be the external examiner.

He was working on a book with Jean Leslie about the Stevenson family history, with Roland covering the Stevenson's immense engineering contributions to lighthouse design and Jean on the family aspects, including the author Robert Louis Stevenson.

Shortly afterwards, I attended a meeting in London – a musical soiree to celebrate Skempton's 75<sup>th</sup> birthday. Skem didn't look too well and when I got back to Edinburgh I caught up with Roland and asked how the book was coming along, and saying it would be a good idea to extract the Stevenson family elements and replace it with an engineering introduction and summary and get the PhD finished. The book could come later.

"But Paul" he said, "I've been invited to Japan next week to give some lectures".

But by the time he returned he'd done what I'd suggested, added a couple of chapters and re-paginated the whole thing, and got Skem's availability for the Oral which would be held in London. Brilliant!

And so 24 years after his master's degree, in 1999, he was awarded a PhD for an excellent thesis on the work of the Scottish engineering dynasty of engineers – the Stevenson family, This included Robert Stevenson, designer of the Bell Rock Lighthouse and grandfather of author Robert Louis Stevenson.

I was, if only nominally, Roland's PhD supervisor. At the PhD viva, my role was to help Skempton to make the coffee.....

There isn't time today to give a complete list of Roland Paxton's scholarly and conservation contributions to the recording, preservation, and wider appreciation and enlightenment of the world's civil engineering heritage, so I will confine this to a tale of three bridges.

The Forth Bridge is an international icon of both Civil Engineering and Scotland itself, and which almost everyone here will have heard of.

If the Forth Bridge is the world's most famous railway bridge, where, might you ask, is the world's oldest railway bridge? Until Roland Paxton demonstrated its provenance in 1992, no-one knew it was somewhere near Kilmarnock: the 1811 Laigh Milton Viaduct built for the Kilmarnock and Troon Railway. Unfortunately, the railway had long since gone and the viaduct was a series derelict masonry arches over the River Irvine in Ayrshire. It was on the verge of collapse with a tree growing out it. In fact it was about to fall down.

Undaunted, Roland set up the Laigh Milton Viaduct Conservation Trust, and then personally bought the bridge for a pound from the riparian landowners and raised the £1.1m to restore it.

If that wasn't enough 20 years later, he then got involved in the restoration of the Union Chain Bridge over the River Tweed, between Northumbria in England and Berwickshire in Scotland.

When it opened in 1820, it was the longest wrought iron suspension bridge in the world with a span of 449 feet and only the 17<sup>th</sup> to be awarded that accolade. It is still the oldest Chain Bridge to be still carrying road traffic. Roland Paxton was Patron of the Friends of the Union Bridge. Together with the two local Councils either side of the Tweed, Northumbria County Council and Scottish Borders Council they co-funded the bridge restoration alongside funding from the National Lottery.

Without Roland neither of these bridge restorations would have happened.

The Forth Bridge celebrated its centenary in 1989. Roland Paxton organised the Forth Bridge Centenary Symposium - including a bridge design competition for schools. And he gave the opening lecture at the Edinburgh International Science Festival in 1990.

He edited the defining modern text on the Forth Bridge, which has now become a collector's item, including a version translated into Japanese.

By the mid 90s he was campaigning successfully against the deteriorating condition of the Forth Bridge, a topic picked up by Tam Dalyell MP. Roland's campaign succeeded.

The Institution of Civil Engineers Scotland Museum at Heriot Watt became home to its collection of over 670 artefacts relating to civil engineering, many of which have strong local connections including a number of items relating to the Forth Bridge.

In addition to its collection of artefacts, the website hosts [The Paxton Archive](#) which comprises over 400 papers and other documents on a wide variety of historical and biographical civil engineering topics mostly written by or from Roland's collection.

The Museum is owned by the Institution of Civil Engineers (ICE) and is hosted by the University. Roland Paxton was largely responsible for the creation of the Museum in its current form in the mid 1990s.

Roland Paxton is by nature a keen and accurate observer – most of us are content just to look at things, but Roland Paxton has acquired a far better gift – that of being able to see things and recognise their importance. This is the clue to the other side of Roland Paxton's character.

Put simply, Roland was Britain's leading civil engineering historian.

He was a Fellow of the Royal Society of Edinburgh. From 1992-2002 he served on the Royal Commission on the Ancient and Historical Monuments of Scotland – the first Civil Engineer to do so.

He was a Trustee of the James Clerk Maxwell Foundation, a former President of the Edinburgh Bibliographical Society, a Founding Trustee of the Forth Bridges Visitor Centre Trust, and Chair of the Institution of Civil Engineers' Panel for Historical Engineering Works.

In 1999 he was awarded the Institution of Civil Engineers' Garth Watson Medal in recognition of his crucial work on the history of civil engineering and the preservation of civil engineering heritage. In 2001 he was awarded the ICE's Robert Alfred Carr Medal for his paper on the Millennium Link – the £78m Regeneration of the Forth and Clyde and Union Canals Restoration, characterised by the emblematic Falkirk Wheel.

On Roland's 93<sup>rd</sup> Birthday in June I was very lucky to share a canal trip with Roland and his daughter Adele along the Union Canal to the Almond Aqueduct. We enjoyed a bottle of bubbly and some sparkling conversation about the history of the Canal

As well as giving innumerable invited lectures in the UK, he has undertaken many invited lecture tours overseas – particularly in the USA and Japan, where he became almost as well-known as he was in Britain. He was named by the American Society of Civil Engineers "College of Fellows Lecturer for 2000" and was awarded their 2003 History and Heritage Award, the first non-US citizen to be so honoured. He was similarly recognised in Japan

Roland Paxton has made major contributions to civil engineering history, the understanding of its rich heritage, and the conservation of many engineering artefacts that have contributed to a civilised society.

**If the natural world has had Sir David Attenborough,**

**Civil engineering has had Roland Paxton!**

Thank you, Roland.

You have been a great friend, to me and all of us.

Thank you

Professor Paul Jowitt, Dec 1<sup>st</sup> 2025